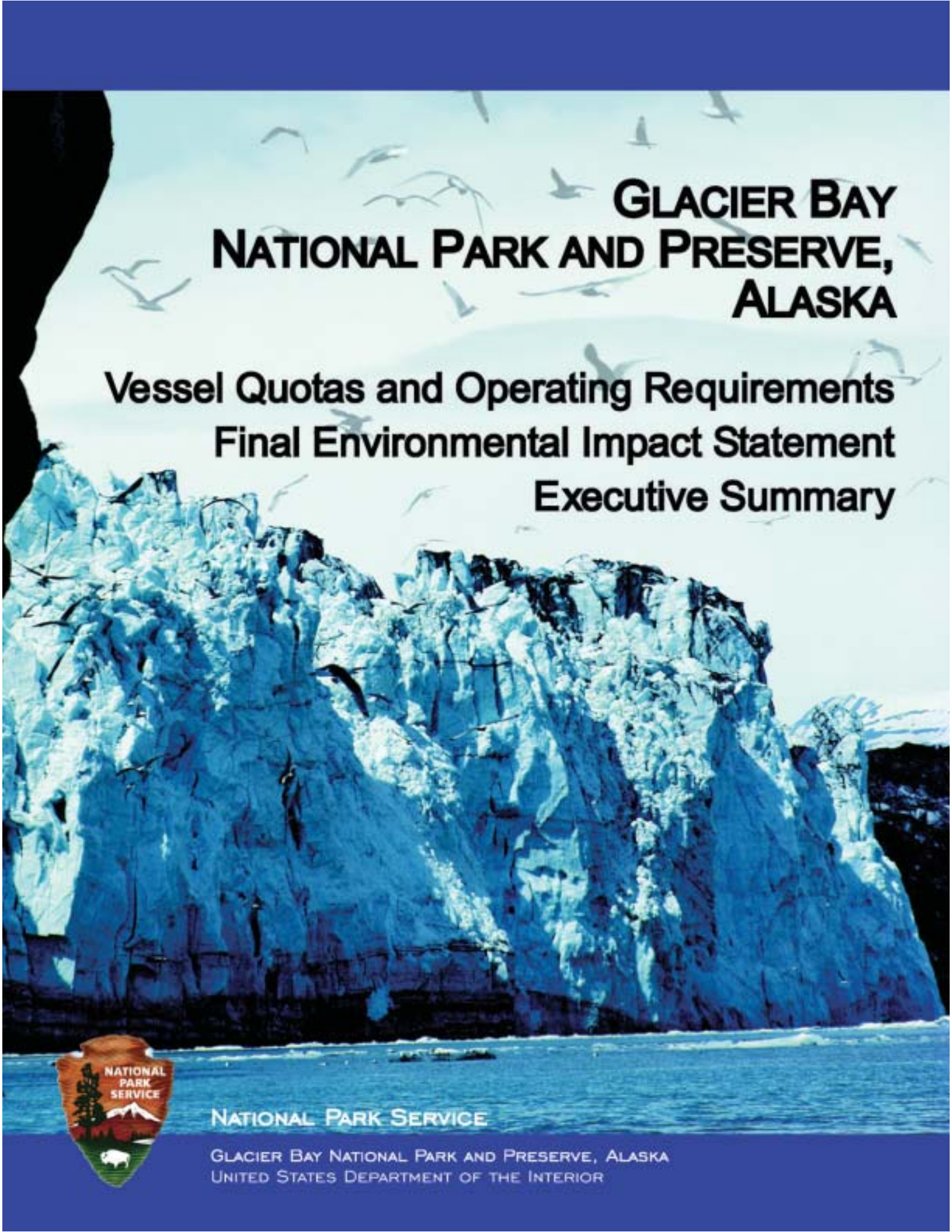

Glacier Bay National Park and Preserve, Alaska

Vessel Quotas and Operating Requirements
Final Environmental Impact Statement
Executive Summary

National Park Service

Glacier Bay National Park and Preserve, Alaska
United States Department of the Interior

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Back Cover, Tufted Puffin Photograph by Shiway Wang

United States Department of the Interior

NATIONAL PARK SERVICE
Glacier Bay National Park and Preserve
P.O. Box 140
Gustavus, Alaska 99826-0140

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IN REPLY REFER TO:

October 3, 2003

Dear Reader:

Enclosed is the Executive Summary for the *Final Environmental Impact Statement (FEIS) for Vessel Quotas and Operating Requirements in Glacier Bay National Park and Preserve*. The FEIS describes six alternatives for establishing quotas and associated operating requirements for four types of motor vessels – cruises ships and tour, charter, and private vessels – in Glacier Bay and Dundas Bay. The EIS was prepared in response to direction by the U.S. Congress as well as new operational needs since 1996.

A draft EIS (DEIS) was published in March 2003. Over 1,000 people submitted comments on the DEIS. If you were one of them, thank you very much. We have read and considered each comment and have made numerous revisions and corrections to the DEIS based on what we learned from you. The FEIS contains a record of public comments and includes copies of the substantive comments submitted during the public comment period, with accompanying National Park Service (NPS, also "the Park Service") responses. To view the FEIS online please visit the park's website at http://www.nps.gov/glba. Click on "Vessel Management EIS" under "News and Events."

The FEIS contains a new alternative, alternative 6, which is the NPS preferred alternative. Many commenters on the DEIS requested that some or all of the operating requirements identified in the environmentally preferred alternative (alternative 4) be included in the preferred alternative. Alternative 6 shares one important element with alternative 3 in that it provides for a potential increase in cruise ship seasonal-use days during the June through August summer season. In addition, it shares many of the operating requirements considered in alternatives 4 and 5. The operating requirements for these alternatives reflect experience and knowledge gained during the past several years. They would provide additional resource protection while also simplifying the vessel management system. The effects of alternative 6 are within the range of those evaluated in the DEIS.

The FEIS includes a record of consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries, including a biological opinion, which documents NPS compliance with the Endangered Species Act for the preferred alternative. The biological opinion contains several conservation recommendations and concludes with a no jeopardy finding for the endangered humpback whale and Steller sea lion. NOAA Fisheries also issued a concurrence of no-effect on essential fish habitat based on an assessment provided by the Park Service.

A 30-day no-action period follows the release of the FEIS. The NPS decision, including any mitigation measures and the rationale for the decision, will occur after this time and will be documented in a record of decision scheduled for release in late November 2003.

We truly appreciate your contributions to this important planning effort for Glacier Bay National Park and Preserve.

Sincerely,

Tomie Patrick Lee

Tomie Patrick Lee
Superintendent

EXECUTIVE SUMMARY

OCTOBER 2003

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INTRODUCTION

The National Park Service (NPS, also "the Park Service") proposes to establish new or keep existing quotas and operating requirements for four types of motorized watercraft - cruise ships and tour, charter, and private vessels - within Glacier Bay and Dundas Bay in Glacier Bay National Park and Preserve. A draft environmental impact statement (DEIS) was prepared, as required, under the National Environmental Policy Act (NEPA) of 1969 and Council of Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500). The DEIS was issued in March 2003. A final EIS (FEIS) is now available. It reflects revisions made to the DEIS based on comments received during a public review that took place from March 21 to May 14, 2003. The FEIS describes five action alternatives and a no-action alternative, and contains a detailed analysis of the environmental consequences of each alternative. The alternatives present different combinations of vessel quotas and operating requirements, based on the results of information obtained and issues raised during a public scoping process that took place in 2002.

This document is an executive summary of the FEIS.

PURPOSE AND NEED FOR ACTION

The purpose for the action is to address the continuing demand for motorized watercraft access into Glacier Bay and Dundas Bay in a manner that protects park resources and values and provides for a range of high-quality opportunities for visitors to the park (see figures 1 and 2). The Park Service seeks to develop a system of vessel quotas and operating requirements to guide management of vessel traffic in the park. Implementation of new vessel quotas and/or operating requirements would require promulgation of regulations.

The need for action stems from legislation enacted in 2001, wherein the U.S. Congress directed the Park Service to set the maximum level of motorized vessel entries based on the analysis in the EIS. Reevaluation of vessel quotas and operating requirements is required to address the continuing demand for vessel

GLACIER BAY
NATIONAL PARK AND PRESERVE, ALASKA


Planning Area of the
Vessel Quotas and Operating Requirements
Environmental Impact Statement
Figure 2
National Park Service
U.S. Department of
the Interior
Tarr Inlet
Reid Inlet
Muir Inlet
Johns Hopkins Inlet
Wachusett Inlet
Adams Inlet
Hugh Miller Inlet
Scidmore Bay
Carpenter Inlet
Glacier Bay
Planning Area =
Glacier Bay & Dundas Bay
Gilkie Inlet
N
W
E
S
Bartlett Cove
Dundas Bay
Taylor Bay
Pt. Carolus
Pt. Gustavus
Icy Strait
Pt. Whitshed
Gulf of Alaska
Planning Area of the Vessel Quotas and Operating Requirements Environmental Impact Statement
Boundary of Glacier Bay National Park & Preserve
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements
Environmental Impact Statement
5 0 5 10 Miles

entries and park visitation. A Park Service objective, through the planning process and EIS, is to comprehensively address issues and concerns associated with vessel management and the park's marine environment.

BACKGROUND

Measures to address vessel traffic in Glacier Bay were implemented in 1979. Temporary regulations went into effect in 1980 and permanent regulations were promulgated in 1985 to respond to concerns about the effects of motor vessels on the endangered humpback whale. Since then, concerns have broadened to encompass potential effects on other animals, the physical environment, and visitor experience.

In 1996, the Park Service completed a revised environmental assessment (EA) and issued a finding of no significant impact regarding vessel quotas and operating requirements that, among other things, provided for increases in cruise ships, charter vessels, and private vessels in Glacier Bay. The decision provided for an incremental increase in cruise ships - from 139 up to 184 ships - over the June through August season (ultimately, up to two cruise ships per day, every day, over those three months).

In a May 1997 complaint filed in the U.S. District Court, the National Parks Conservation Association challenged the validity of the Park Service's 1996 finding of no significant impact. The U.S. District Court upheld the decision made by the Park Service. Following an appeal, the U.S. Ninth Circuit Court of Appeals determined in February 2001 that the portion of the 1996 EA and the implementing regulations that authorized an increase in vessels into Glacier Bay violated NEPA because an EIS was not prepared. The court returned vessel numbers to pre-1996 levels pending preparation of an EIS. In November 2001, Public Law 107-63 required the Park Service to prepare an EIS by January 1, 2004, to identify and analyze the possible effects of the 1996 increases and set the maximum level of vessel entries into Glacier Bay based on the analysis in the EIS. Until this level of vessel entries is set, the U.S. Congress provided that the number of vessel

entries into Glacier Bay would be the same as those in effect during the 2000 calendar year and that the Park Service's 1996 decision and regulations relating to vessel entries were approved and would be in effect. The court modified its decision accordingly.

THE EIS PROCESS

The Park Service communicated with representatives from several government agencies, including a tribal government, organizations, businesses, and the general public while developing the range of alternatives for the EIS. The scoping period began on February 22, 2002, with publication in the *Federal Register* of a notice of intent (NOI) to prepare an EIS. Another notice published in the *Federal Register* on May 6, 2002, extended the scoping period to June 7, 2002. During scoping, the Park Service published a brochure inviting the public to participate in the scoping process and providing basic information about the NEPA process and the preliminary issues and actions under consideration.

The Park Service hosted public meetings in May 2002, in Hoonah, Gustavus, Pelican, Elfin Cove, Anchorage, and Juneau, Alaska, and in Seattle, Washington. Meeting participants could review displays, maps, and literature, and speak directly with members of the EIS project team.

The Park Service conducted a number of internal scoping meetings, including meetings in April and May 2002. Also in May 2002, the EIS project team met with representatives from the U.S. Geological Survey (USGS) Science Center; several State of Alaska agencies; NOAA Fisheries; and with the board of the Hoonah Indian Association (a federally recognized tribal government).

Based on the information gained through the scoping process, major issues, alternative courses of action, and measures that could mitigate potentially adverse environmental effects were identified for analysis in the DEIS.

Preparation of the DEIS began in June 2002 and was completed in March 2003. The public review

period for the DEIS began with the issuance of the DEIS and publication of the U.S. Environmental Protection Agency's (EPA's) notice of availability in the *Federal Register* (*Federal Register, volume 68, number 55*, March 21, 2003). The public comment period ended on May 14, 2003. During April 2003, the Park Service conducted seven open houses/public hearings to receive verbal and written comments on the DEIS. These meetings were held in Hoonah, Gustavus, Pelican, Elfin Cove, Juneau, and Anchorage, Alaska, and in Seattle, Washington. Seventy-nine persons attended these open houses/public hearings. In addition to receiving comments during these public hearings, the Park Service received more than 1,000 electronic mail messages, postcards, comment letters, and web-based comments from government agencies, businesses, organizations, and private citizens.

Per NEPA section 1503.4, regarding responses to comments, agencies preparing FEISs can respond to comments in a number of ways. A record of public comments is included and substantive oral and written comments on the DEIS are responded to in appendix M of the FEIS. The FEIS is available to the public and filed with the EPA. The EPA's *Federal Register* notice of availability for the FEIS is scheduled to be published on October 10, 2003.

Consultations with Government agencies

Several consultations with government agencies, including the Hoonah Indian Association, a federally recognized tribal government, occurred during the EIS process. Three consultations are explained below.

Hoonah Indian Association

The National Park Service has had ongoing communications with the Hoonah Indian Association, a federally recognized tribal government, as well and other regional Native organizations with interests in matters pertaining to Glacier Bay National Park and Preserve. All parties consulted concur that Glacier Bay and Dundas Bay lie within the traditional homelands of the Hoonah Tlingit and that the Hoonah Indian

Association is the representative government for the Hoonah Tlingit. During this extended consultation, the full range of issues relating to vessel quotas, operating requirements and cultural resources was identified and discussed at length. Prior to the EIS, extensive ethnographic research was conducted to gather detailed information about cultural resources important to the Hoonah Tlingit. In conjunction with the EIS, meetings were held with the tribal government a full year prior to scoping to advise them of the upcoming EIS process and to begin to identify issues of concern. Scoping meetings were held later with the tribal government and with community and tribal members, and follow-up meetings resulted in a new agreement regarding access to Glacier Bay by members of the Hoonah Indian Association.

The Park Service is consulting with the Hoonah Indian Association regarding Glacier Bay's harbor seals and their role in Hoonah culture, including discussions about access to this important traditional food and the population trend of seals in the park. Other issues discussed include effects on air and water quality and overall ecosystem health.

U.S. Fish and Wildlife Service and NOAA Fisheries

The Park Service consulted with NOAA Fisheries (formerly the National Marine Fisheries Service) and the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act. The U.S. Fish and Wildlife Service determined that no threatened or endangered species under their jurisdiction are present in Glacier Bay or Dundas Bay (USFWS case number 02-14V). NOAA Fisheries identified the humpback whale and Steller sea lion as listed species present in the action area and, based on formal consultations with the Park Service, issued a biological opinion. This new biological opinion replaces the biological opinion issued by the National Marine Fisheries Service in 1993. The new opinion determined that the vessel quota increases and operating requirements in Glacier Bay, as proposed, are not likely to jeopardize the continued existence of listed species in the action area, nor are they likely to destroy or adversely modify designated critical habitat found in the action area. Four conservation recommendations are included in the opinion. All four relate to monitoring and study; they are presented as "NOAA Fisheries'

Recommendations" in a subsequent section of this executive summary following the section entitled, "Ongoing and Potential Future Studies and Monitoring."

State of Alaska Office of History and Archaeology / State Historic Preservation Officer

To comply with section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended in 1992, and the Alaska Historic Preservation Act (1970), the Park Service consulted with the State Historic Preservation Officer (SHPO) regarding undertakings that may affect historic properties. The State Historic Preservation Officer concurred that cultural resources would not be adversely affected as a result of actions being considered in the EIS.

CHANGES BETWEEN THE DEIS AND FEIS

The FEIS includes revisions to the text of the DEIS based on responses to public comments and on internal discussions within the Park Service.

The FEIS presents and evaluates a new alternative, alternative 6, which the Park Service has identified as the agency preferred alternative (alternative 3 was identified as the agency preferred alternative in the DEIS). Many public comments requested that some or all of the operating requirements identified in the environmentally preferred alternative (alternative 4) be included in the NPS preferred alternative. Alternative 6 includes many of these and is within the spectrum of the alternatives evaluated in the DEIS. An analysis of the effects of the new alternative is included for each impact topic. Alternative 6 and the other EIS alternatives are described in a subsequent section of this executive summary.

The analysis for each impact topic in the DEIS was reviewed and revised as necessary, based on public comments, any pertinent information obtained subsequent to issuance of the DEIS, and additional NPS consideration. In addition, many sections of the DEIS were edited to improve clarity and remove unnecessary and/or repetitive text. For example, several subsec-

tions in chapter 4, including soundscape, threatened and endangered species, marine mammals, marine fish, visitor experience, and socioeconomics were revised to improve logic and clarity and to address public comments.

Factual errors in the DEIS identified during the public comment period and by NPS are corrected in the FEIS. The FEIS also provides information not available at the time of issuance of the DEIS.

ACTIONS CONSIDERED IN THE EIS

As a result of scoping, topics and actions were identified to be considered in the EIS. Identified for evaluation in one or more of the alternatives are:

- establishment of vessel quotas and designation of quota seasons for Glacier Bay.
- defining vessel classification criteria.
- exemption of private vessels based in Bartlett Cove.
- short-notice vessel permits.
- vessel travel routes for cruise ships and waters closed to cruise ship and/or tour vessel use.
- vessel speed restrictions and speed measurement methods.
- establishment of vessel quotas and designation of quota seasons for tour and/or charter vessels for Dundas Bay (currently no vessel quotas are in place for Dundas Bay).

The waters identified as closed to all motor vessels in the current regulations were not revisited and no additional waters closed to all motor vessels were contemplated during this EIS process.

The topics identified for inclusion in the effects analysis include:

- surface and underwater soundscape.
- air quality.
- water quality.
- threatened and endangered species.
- marine mammals.
- marine birds and raptors.
- marine fishes.
- coastal/shoreline environments and biological communities.
- cultural and historical resources.
- opportunity for and quality of visitor experiences.
- vessel use and safety.
- wilderness resources.
- local and regional socioeconomics.

THE ALTERNATIVES

The National Park Service is considering six alternatives, including a no-action alternative, to address the purpose and need for action described above. Each alternative defines vessel quotas (limits) and/or operating requirements for cruise ships and tour, charter, and private vessels. The alternatives share one common action: the daily vessel quota for cruise ships in Glacier Bay would be the same across alternatives (two per day year-round).

Table 1 provides a comparison of terms and definitions used in the discussion of alternatives.

Alternatives 1, 2, and 3 differ only in the number of vessels permitted to enter Glacier Bay. These three alternatives share the same operating requirements (i.e., the current regulations would apply). Alternative 1 (also called the "no-action" alternative) would maintain the current quotas. Alternative 2 would decrease vessel quotas to those in effect in 1995. Alternative 3 would maintain the current quotas but also provide for possible increases in seasonal-use days for cruise ships (up to two per day, every day, from June through August), based on scientific and other information and applicable authorities.

Alternative 4 (the environmentally preferred alternative) would set vessel quotas for Glacier Bay at the levels in effect prior to 1985. Seasonal entries would not apply, and the number of seasonal-use days for private vessels would be increased as a result. Daily and seasonal vessel quotas would be established for charter vessels in Dundas Bay. Neither cruise ships nor tour vessels would be allowed in Dundas Bay. No quotas would be set for private vessels. The quota season would be May through September for both Glacier Bay and Dundas Bay. Operating requirements would be revised.

Alternative 5 would maintain the current daily quotas and quota season for all four vessel types in Glacier Bay. It would maintain the number of seasonal-use days for cruise ships, tour vessels, and charter vessels in Glacier Bay during the current June 1 through August 31 quota season, but decrease the number of seasonal-use days for cruise ships during May and September. Seasonal entries

TABLE 1: COMPARISON OF DEFINITIONS FOR ALTERNATIVES 1 THROUGH 6

Term	Alternatives 1, 2, and 3 Current regulations apply, and current regulatory language is shown below.	Alternative 4 Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.	Alternative 5 Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.	Alternative 6 Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.
Adams Inlet (wilderness boundary)	East of the wilderness boundary at the mouth of the inlet.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.
Administrative Use	Not specifically defined in the current regulations, but managed as a motor vessel engaged in official business for the state or federal government. See 13.65(b)(2)(ii). Exceptions from entry permit requirement.	Any motor vessel engaged in official government business.	Same as alternative 4.	Same as alternative 4.
Administrative Vessel	Not defined in the current regulations, but managed as any vessel involved in administrative use.	Any vessel involved in administrative use.	Same as alternative 4.	Same as alternative 4.
Bartlett Cove Passenger Ferry[b]	Any motor vessel engaged in the transport of passengers for hire, with sole purpose of accessing park or other authorized visitor services or facilities at, or originating from, the public dock area at Bartlett Cove, as provided in Public Law 105-83, Title I, section 27.	A motor vessel of less than 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) permitted by the superintendent to engage in the transport of passengers for hire into Bartlett Cove from Juneau with sole purpose of accessing park or other authorized visitor services or facilities at, or originating from, the public dock area at Bartlett Cove.	Same as alternative 4.	Same as alternative 4.
Beardslee Entrance (wilderness boundary)	East of the wilderness boundary at the Beardslee Entrance and south of the wilderness boundary extending from Sita Reef to Beartrack Cove.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.
Charter Vessel	Any motor vessel under 100 tons gross (U.S. System) of 2,000 tons gross (International Convention System) that is rated to carry up to 49 passengers, and is available for hire on an unscheduled basis, except a charter vessel used to provide a scheduled camper or kayak drop-off service.	Any motor vessel of less than 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) engaged in transport of passengers for hire and rated to carry up to 12 passengers overnight or up to 49 passengers for daytime use, except when operating as an administrative vessel. Charter vessels also include any uninspected vessel of less than 200 tons gross (U.S. Simplified Measurement System) and not more than 24 meters (79 feet) in length engaged in transport of passengers for hire, except when operating as an administrative vessel.	Same as alternative 4.	Same as alternative 4.
Cruise Ship	Any motor vessel at or more than 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) carrying passengers for hire.	Any motor vessel of at least 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) carrying more than 12 passengers for hire, except when operating as an administrative vessel (administrative vessels are those engaged in official government business, including research).	Same as alternative 4.	Same as alternative 4.

TABLE 1: COMPARISON OF DEFINITIONS FOR ALTERNATIVES 1 THROUGH 6

	Alternatives 1, 2, and 3	Alternative 4	Alternative 5	Alternative 6
Term	**Current regulations apply, and current regulatory language is shown below.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**
Daily Vessel Quota	Not defined in current regulations, but managed as the number of vessel-use days allowed in an area on any one calendar day.	The number of vessel-use days allowed in an area on any one calendar day.	Same as alternative 4.	Same as alternative 4.
Dundas Bay	All waters inside a line drawn between Point Dundas and Point Wimbledon.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.
Entry	Each time a motor vessel passes the mouth of Glacier Bay into the Bay; each time a private vessel activates or extends a permit; each time a motor vessel based at or launched from Barlett Cove leaves the dock area on the way into Glacier Bay, except a private vessel based at Barlett Cove that is gaining access or egress to or from outside Glacier Bay; the first time a local private vessel uses a day of the seven-use day permit; or each time a motor vessel singularly launched from a permitted motor vessel and operated only while the permitted vessel remains at anchor, or a motor vessel launched and operated from a permitted motor vessel while that vessel is not under way and in accordance with a concession agreement.	NA	NA	NA
Glacier Bay	All marine waters inside a line drawn between Point Gustavus and Point Carolus.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.
Private Vessel	Any motor vessel used for recreation that is not engaged in commercial transport of passengers, commercial fishing, or official government business.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.
Seasonal-Use Days	Not defined in current regulations, but managed as the number of vessel-use days allowed during a specific seasonal period.	The number of vessel-use days allowed during a specific seasonal period.	Same as alternative 4.	Same as alternative 4.
Short-Notice Private Vessel Permits	NA	Permits available to private vessels on short notice. Private vessel operators could obtain one of these permits by making a reservation within 48 hours of when they desire to enter Glacier Bay.	Same as alternative 4.	Same as alternative 4.
Speed Over the Ground	NA[a]	NA	Speed measured in relation to a fixed point on the earth.	NA
Speed Through the Water	The speed at which a vessel moves through the water (which itself may be moving), as distinguished from "speed over the ground."	Same as alternatives 1, 2, and 3.	NA	Same as alternatives 1, 2, and 3.

TABLE 1: COMPARISON OF DEFINITIONS FOR ALTERNATIVES 1 THROUGH 6

	Alternatives 1, 2, and 3	Alternative 4	Alternative 5	Alternative 6
Term	**Current regulations apply, and current regulatory language is shown below.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**	**Adjustments to the current regulations are shown below; other definitions in the current regulations would continue to apply.**
Tour Vessel	Any motor vessel under 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) that is rated to carry more than 49 passengers, or any smaller vessel that conducts tours or provides transportation at regularly scheduled times along a regularly scheduled route.	Any motor vessel of less than 100 tons gross (U.S. System) or 2,000 tons gross (International Convention System) engaged in transport of passengers for hire and rated to carry more than 12 passengers overnight or greater than 49 passengers for daytime use, except when operating as an administrative vessel.	Same as alternative 4.	Same as alternative 4.
Vessel-Use Days	Any continuous period of time in which a motor vessel is in Glacier Bay from 12 midnight on one day to 12 midnight the next day.	When a motor vessel is in Glacier Bay or Dundas Bay operating under its permit for that calendar day.	Same as alternative 4.	Same as alternative 4.
Whale Waters	Any portion of Glacier Bay, designated by the superintendent, having a high probability of whale occupancy, based upon recent sighting or past patterns of occurrence.	Same as alternative 1, 2, and 3.	Same as alternatives 1, 2, and 3.	Same as alternatives 1, 2, and 3.

a. The term "speed over ground" is referenced in the current regulations, but no definition is provided. It is presumed to be speed measured in relation to a fixed point on the earth.

b. See Title I, section 127, of the Department of the Interior and Related Agencies Appropriations Act of 1998 (Public Law 105-83), which authorizes one entry per day for a passenger ferry into Bartlett Cove from Juneau.

NA = Not applicable.

CFR = Code of Federal Regulations.

would not apply, and the number of seasonal-use days for private vessels would increase as a result. Daily and seasonal quotas would be established in Dundas Bay for tour (lower Bay only) and charter vessels. Cruise ships would not be permitted and tour vessels would not be permitted in the upper Bay (wilderness waters) on a year-round basis. No quotas would be set for private vessels. The current June through August quota season would apply. Operating requirements would be revised.

Alternative 6 (the NPS preferred alternative) would maintain the current daily vessel quotas for Glacier Bay. Seasonal entries would not apply and seasonal-use days for private vessels would be increased as a result. It would maintain the current seasonal-use day quota for cruise ships during the current quota season (June through August), but provide for possible increases to a maximum of two ships per day each day, based on scientific and other information and applicable authorities. Seasonal-use day quotas would be set for cruise ships during May and September; however, the number could increase up to two per day each day. It would maintain the current number of seasonal-use days for tour and charter vessels and increase the number of seasonal-use days for private vessels during the current quota season. Daily and seasonal quotas would be established in Dundas Bay for tour vessels (lower Bay only) and seasonal quotas would be set for charter vessels, quotas would be applicable from June through August. Cruise ships would not be permitted and tour vessels would not be permitted in the upper Bay (wilderness waters) on a year-round basis. No quotas would be set for private vessels. Operating requirements would be revised.

Table 2 provides an overview of the alternatives. Tables 3 and 4 present vessel quotas for each alternative.

Alternative 1: No Action

Alternative 1 is the no-action alternative; it represents the vessel quotas and operating requirements currently in effect. Vessel quotas and operating requirements considered under this alternative pertain to Glacier Bay. Vessel classes would continue to be defined under the existing regulations. The current quotas set by Congress (Public Law

TABLE 2: OVERVIEW OF ALTERNATIVES EVALUATED IN THIS ENVIRONMENTAL IMPACT STATEMENT

Alternative	Vessel Quotas[a]	Operating Requirements
Alternative 1 (no-action alternative)	For Glacier Bay: Current quotas and quota season (see table 3).	Current operating requirements.
Alternative 2	For Glacier Bay: 1985-authorized quotas (those in effect in 1995). Current quota season (see table 3).	Current operating requirements.
Alternative 3	For Glacier Bay: Current quotas with a provision to increase seasonal-use day quotas for cruise ships. Current quota season (see table 3).	Current operating requirements.
Alternative 4 (environmentally preferred alternative)	For Glacier Bay[b]: Current daily quotas for cruise ships; slightly reduced daily quotas for tour, charter, and private vessels. Reduced seasonal-use days for cruise ships, and tour and charter vessels; slightly increased number of seasonal-use days for private vessels. Quota season lengthened (May 1–Sept 30) for all vessel classes (see table 3). For Dundas Bay: Cruise ships and tour vessels not permitted year-round. Daily and seasonal-use day quotas initiated for charter vessels. The quota season would be May 1 – Sept 30. No quotas set for private vessels (see table 4).	Revised operating requirements, including seasonal-entry quotas, not applicable; limited closures of certain waters to cruise ships and tour vessels; decreased vessel speed for large vessels.
Alternative 5	For Glacier Bay[b]: Current daily quotas for cruise ships, and tour, charter, and private vessels. Lengthened quota season for cruise ships to May1 – Sept 30. Current number of seasonal-use days for cruise ships, and tour and charter vessels during the current quota season. Increased number of seasonal-use days for private vessels. Decreased number of seasonal-use days for cruise ships during May and Sept (see table 3). For Dundas Bay: Cruise ships not permitted year-round. Tour vessels not permitted in wilderness waters. Daily quotas initiated for tour vessels and seasonal-use day quotas initiated for tour and charter vessels. No quotas set for private vessels (see table 4).	Revised operating requirements, including seasonal-entry quotas, not applicable; limited closures of certain waters to cruise ships and tour vessels; decreased vessel speed for large vessels; and use of "speed over ground" as a measure of speed.
Alternative 6 (NPS preferred alternative)	For Glacier Bay[b]: Current daily quotas with a provision to increase seasonal-use days for cruise ships during the current quota season. Decreased seasonal-use days for cruise ships during May and September with the provision to increase to what is allowed with the current daily quota. Current daily quotas and seasonal-use days for tour and charter vessels and current daily quotas and increased seasonal-use days for private vessels during the current quota season (see table 3). For Dundas Bay: Cruise ships not permitted year-round. Tour vessels not permitted in wilderness waters. Daily quotas initiated for tour vessels and seasonal-use day quotas initiated for tour and charter vessels. No quotas set for private vessels (see table 4).	Revised operating requirements, including seasonal-entry quotas, not applicable; limited closures of certain waters to cruise ships and tour vessels; and decreased vessel speed for large vessels.

a. Dundas Bay is not regulated under alternatives 1, 2, and 3 but is under alternatives 4, 5, and 6.
b. Comparisons are to alternative 1 (no action).

TABLE 3: COMPARISON OF VESSEL QUOTAS IN GLACIER BAY FOR ALTERNATIVES 1 THROUGH 6

Vessel Class		Alternative 1 [b]		Alternative 2 [b]		Alternative 3 [b]		Alternative 4		Alternative 5		Alternative 6	
		June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept	June 1 – Aug 31	May and Sept
Cruise Ship [a]	Daily Vessel Quota	2	2	2	2	2	2	2	2	2	2	2	2
	Seasonal Entries	139	No limit	107	No limit	139 (potentially up to 184)	No limit	NA	NA	NA	NA	NA	NA
	Seasonal-Use Days	139	122	107	122	139 (potentially up to 184)	122	92	61	139	92	139 (potentially up to 184)	92 (potentially up to 122)
Tour Vessel [a]	Daily Vessel Quota	3	3	3	3	3	3	2	2	3	3	3	3
	Seasonal Entries	276	No limit	276	No limit	276	No limit	NA	NA	NA	NA	NA	NA
	Seasonal-Use Days	276	183	276	183	276	183	184	122	276	183	276	183
Charter Vessel	Daily Vessel Quota	6	No limit	6	No limit	6	No limit	5	5	6	No limit	6	No limit
	Seasonal Entries	312	No limit	271	No limit	312	No limit	NA	NA	NA	NA	NA	NA
	Seasonal-Use Days	552	No limit	511	No limit	552	No limit	460	305	552	No limit	552	No limit
Private Vessel	Daily Vessel Quota	25	No limit	25	No limit	25	No limit	22	22	25	No limit	25	No limit
	Seasonal Entries	468	No limit	407	No limit	468	No limit	NA	NA	NA	NA	NA	NA
	Seasonal-Use Days	1,971	No limit	1,714	No limit	1,971	No limit	2,024	1,342	2,300	No limit	2,300	No limit

a. Cruise ships and tour vessels are limited to the daily vessel quota year-round.

b. Information is shown for May and September to facilitate comparison with alternatives 4 and 5 where quota season is extended to include May and September (for all classes [alternative 4] and cruise ships only [alternative 5]).

NA = Not applicable.

TABLE 4: COMPARISON OF VESSEL QUOTAS IN DUNDAS BAY FOR ALTERNATIVES 1 THROUGH 6

Vessel Class	Quotas	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Cruise Ship	Daily Vessel Quota	No limit[c]			Not permitted	Not permitted[a]	Not permitted[a]
	Seasonal Entries	No limit[c]			NA	NA	NA
	Seasonal Use Days	No limit[c]			NA	NA	NA
Tour Vessel	Daily Vessel Quota	No limit			Not permitted	Not permitted in wilderness waters[b]; 1 in non-wilderness waters[c]	Not permitted in wilderness waters[b]; 1 in non-wilderness waters[c]
	Seasonal Entries	No limit			NA	NA	NA
	Seasonal-Use Days	No limit			NA	Not permitted in wilderness waters[b]; 92 in non-wilderness waters[c]	Not permitted in wilderness waters[b]; 92 in non-wilderness waters[c]
Charter Vessel	Daily Vessel Quota	No limit			3[a]	No limit	No limit
	Seasonal Entries	No limit			NA	NA	NA
	Seasonal-Use Days	No limit			459[d]	276[c]	276[c]
Private Vessel	Daily Vessel Quota	No limit					
	Seasonal Entries	No limit					
	Seasonal-Use Days	No limit					

a. Vessel quota season is May 1 through September 30.

b. This is a year-round limitation.

c. Vessel quota season is June 1 through August 31.

d. Through the NPS competitive allocation of cruise ship permits, existing cruise ship operators have committed to an itinerary that does not include Dundas Bay; however, there are currently no regulations that prohibit cruise ships from entering Dundas Bay.

107-63) in November 2001 would remain in effect under this alternative. The current quota season of June 1 through August 31 and the current vessel operating requirements would remain in effect (see figure 3).

Vessel Quotas. This alternative would maintain existing visitor-use opportunities in Glacier Bay by continuing the vessel quotas for cruise ships and tour, charter, and private vessels, set by Congress in 2001. The current quota season of June 1 through August 31 would remain in effect. A maximum of two cruise ships per day would be allowed entry to Glacier Bay year-round; however, the June 1 through August 31 seasonal limit of 139 cruise ship entries would ensure that some days during the season would have fewer than two cruise ship entries. The provisions for private vessels based at Bartlett Cove would remain in effect. That is, no permit would be required for private vessels based at Bartlett Cove transiting between Bartlett Cove and waters outside Glacier Bay, or private vessels operating in Bartlett Cove in waters bounded by the public and administrative docks.

Vessel Operating Requirements. Under alternative 1, vessel operating requirements would follow the existing regulations and the park compendium. The park compendium is a written compilation of designations, permit requirements, and other restrictions imposed by the superintendent under the discretionary authority found in the Code of Federal Regulations. The compendium can be found on the park's website (www.nps.gov/glba), and is also contained in the FEIS as appendix B.

Vessel speed — Under alternative 1, vessels would continue to be required to operate at speeds of 20 knots or less in the designated lower Bay whale waters (May 15 through August 30). (The superintendent may impose a 10-knot speed limit in any area because of whale concentrations.) Vessel speed is measured "through the water," or the speed at which a vessel moves through the water (which itself may be moving), as distinguished from speed "over the ground."

Whale waters — Whale waters are any portion of Glacier Bay designated by the superintendent as having a high probability of whale occupancy, based upon recent sightings or past patterns of occurrence. From May 15 through August 31, the lower Bay, would be desig-


Vessel Operating Requirments
Under Alternatives 1, 2, & 3
Figure 3
National Park Service
U.S. Department of the Interior
Tarr Inlet
Russell Island Passage 6/1 - 8/31
Reid Inlet 5/1 - 9/15
Upper Muir Inlet 6/1 - 7/15
Adams Inlet 5/1 - 9/15
Wachusett Inlet 7/16 - 8/31
Russell Islets
Joe Point
Reid Inlet
Johns Hopkins Inlet All Vessels: 5/1 - 6/30 Cruise Ships: 5/1 - 8/31 Speed Limit: 7/1 - 8/31
0.25 nautical mile approach limit to harbor seal haul-outs 7/1 - 9/31
Blue Mouse Cove
Glacier Bay
Muir Point
Garforth Island
Caroline Point
East Arm Entrance 6/1 - 8/31
Hugh Miller Inlet Soldiers Bay Charpentier Inlet 5/1 - 9/15
Sabree Island
Lone Island
Geikie Rock
Sturgess Island
Puffin Island
N. Sandy Cove
Leland Island
S. Marble Island
N
W
E
S
Whidbey Passage 6/1 - 8/31
Flapjack Island and Islets
Boulder Island
Boardoloe Islands 5/1 - 9/15
Eider Island
Lower Glacier Bay Whale Waters: 5/15 - 8/31 Speed Limit: 5/15 - 8/31
Dundas Bay
Park Boundary
Notes: Vessel operating requirements on this figure reflect the existing conditions (current regulations). The dates shown are those during which seasonal restrictions apply.
Islands with Protective Buffers
(Islands' names shown in red)
Seasonal Non-Motorized Waters
Seasonal Whale Waters
Seasonal Speed Restricted Areas
Seasonal Noise Restricted Area
(10 pm - 6 am, 6/1 - 8/31)
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements
Environmental Impact Statement
5 0 5 10 Miles

nated whale waters. From June 1 through August 31, Whidbey Passage, East Arm entrance waters, and Russell Island Passage waters would also be designated whale waters (see 36 CFR 13.65 or appendix A of the FEIS for a description of boundaries). The superintendent also may establish temporary whale waters and impose speed restrictions to protect whales. Current regulations specify that except for vessels actually fishing or otherwise authorized, or vessels operating solely under sail, while in transit, operators of motor vessels over 18 feet (5.5 meters) long must maintain a distance of at least one nautical mile from shore in designated whale waters and in narrower areas, must navigate in mid-channel.

Vessel routes and destinations — Under alternative 1 vessel routes are not defined although cruise ships generally follow the mid-channel of Glacier Bay. Closed waters are defined in 36 CFR 13.65, and no additional waters closed to all motor vessels are contemplated. For the protection of harbor seals, Johns Hopkins Inlet is closed to cruise ships from May 1 through August 31 and to all vessels from May 1 through June 30. From July 1 through August 31, in Johns Hopkins Inlet, all vessels are required to stay 0.25 nautical mile (0.4 kilometer) from seals hauled out on ice.

Alternative 2

Under alternative 2, vessel classes would continue to be defined under the existing regulations. Vessel operating requirements and the quota season would remain the same as those under the no-action alternative (see figure 3).

Alternative 2 would decrease seasonal quotas for cruise ships and charter and private vessels from current quotas, setting them at the levels in effect in 1995 (i.e., quotas authorized by 1985 vessel regulations). This would result in:

- a 23% reduction in cruise ship seasonal entries (from 139 to 107).
- a 13% reduction in charter vessel seasonal entries (from 312 to 271) and a 7% reduction in charter vessel seasonal-use days (from 552 to 511).
- a 13% reduction in private vessel seasonal entries (from 468 to 407) and a 3% decrease in seasonal-use days (from 1,971 to 1,714).

Alternative 3

Alternative 3 is identical to alternative 1 with one exception: it would include a provision to increase seasonal quotas for cruise ships from 139 to 184 during June 1 through August 31, based on scientific and other information and applicable authorities. This would equate to a potential increase in cruise ship use up to 32% (from 139 to 184). The increased traffic would be absorbed in early and late summer because the mid-July through mid-August period typically already has two cruise ships per day every day (see figure 3).

Alternative 4: Environmentally Preferred Alternative

This alternative generally would reduce vessel quotas for Glacier Gay. It would revise operating requirements, including extending the season during which quotas would be in effect. It would establish tour and charter vessel quotas for Dundas Bay.

Quotas.

Glacier Bay — Alternative 4, for Glacier Bay, would reduce the daily vessel quotas across all vessel classes, eliminate the use of seasonal entries and reduce seasonal-use days for cruise ships and tour and charter vessels. Under alternative 4, the June through August seasonal limits would change from existing quotas as follows:

- a 33% reduction in cruise ship seasonal entries (from 139 to 92).
- a 33% reduction in tour vessel daily quota (from 3 to 2) and a 33% reduction in seasonal-use days (from 276 to 184).
- a 17% reduction charter vessel daily quota (from 6 to 5) and a 17% reduction in charter vessel seasonal-use days (552 to 460).
- a 12% reduction in private daily quota (from 25 to 22) but a 3% increase in seasonal-use days (from 1,971 to 2,024).

In addition, an extension of the quota season to include May and September would result in a 50% reduction in seasonal-use days for cruise ships and a 33% reduction in seasonal-use days for tour vessels during these two months as compared to the current situation.

Dundas Bay — Alternative 4 would formalize the current cruise ship use pattern by prohibiting cruise ships in Dundas Bay on a year-round basis. Tour vessels also would be prohibited in Dundas Bay. This alternative would establish a daily quota of three and a seasonal-use day quota of 459 for charter vessels in Dundas Bay from May 1 through September

30. Daily vessel quotas would not be set for private vessels.

Season. Daily vessel quotas for cruise ships and tour vessels would apply year-round in Glacier Bay. The prohibition of cruise ships and tour vessels in Dundas Bay would be year-round. Other vessel quotas in Glacier Bay and Dundas Bay under alternative 4 would be in effect from May 1 through September 30.

Permitting Procedures. With this alternative, seasonal entries would be eliminated. Currently, when a vessel leaves Glacier Bay, it is not permitted to return without obtaining a new permit. Under alternative 4, with the elimination of seasonal entries, a vessel could leave the Bay and enter again under one permit within a particular calendar day. Seasonal-use days would be the product of the daily vessel quota times the number of days in the season (June through August = 92 days; May and September = 61 days).

Under alternative 4, current park regulations would be changed from "Each private motor vessel must have a permit" to "Permits shall be issued to a designated individual for a specific vessel over a specific period of time." Permits would be issued to individuals rather than vessels because individuals are responsible for following park regulations.

Under current regulations, private vessels based in Bartlett Cove that enter and exit Glacier Bay do not count as a daily entry (note that traveling up Bay from Bartlett Cove counts as an entry). The "based in Bartlett Cove" exemption would be eliminated under alternative 4. In its place, 10 private vessel permits (of the 22 daily permits allowed), called "short-notice permits" would be set aside for distribution on a short-notice basis (up to 48 hours). Any individual with a private vessel could obtain one of these permits by making a reservation within 48 hours of entrance to Glacier Bay. The number of short-notice permits could be adjusted annually by the superintendent through use of the park compendium.

Vessel Operating Requirements.

Vessel speed — Placing speed limits on vessels is one of the main methods the Park Service uses to reduce the risk of vessels colliding with

marine life. Noise level is related to vessel speed; lower speed means less noise. Vessel speed regulations would change in two fundamental ways under alternative 4. First, vessel speed limits would be based on vessel length; a year-round speed limit of 13 knots through the water would be placed on all vessels greater than or equal to 262 feet (80 meters) to reduce risks of vessel collisions with whales. Second, the timeframe for speed limits in designated whale waters (lower Glacier Bay only) would be extended to May 1 through September 30 (currently May 15 through August 31) to account for the presence of humpback whales throughout the longer period. Motorized vessels less than 262 feet (80 meters) long would be prohibited from operating at more than 20 knots through the water in lower Bay whale waters. All motor vessels would be subject to operating at no greater than 10 knots through the water when the superintendent has designated a maximum of 10 knots because of the presence of whales.

Whale waters — Whale waters would be designated in lower Glacier Bay waters only, from May 1 through September 30 (see 36 CFR 13.65 or appendix A of the FEIS for a detailed description of the boundary). In addition, the superintendent also may designate any portion(s) of Glacier Bay and Dundas Bay as temporary whale waters and impose motor vessel speed restrictions in whale waters.

Vessel routes and destinations — Routes for cruise ships in Glacier Bay would be defined to provide more assurance of resource protection, provide a potentially improved backcountry visitor experience, better separate the various vessels in Glacier Bay, and provide an increased margin of safety for avoidance of nearshore collisions. A cruise ship route would be identified for Glacier Bay using the current typical cruise ship traffic pattern (generally in mid-channel).

Cruise ships would be allowed to go into the West Arm, into Tarr Inlet, and up to Jaw Point in Johns Hopkins Inlet. Cruise ships also would not be allowed into Beardslee Entrance, Dundas Bay, and the East Arm (defined by an imaginary line drawn from southern Sebree Island to the mainland). Tour vessels would not be allowed into Beardslee Entrance, Muir Inlet (the East Arm

of Glacier Bay north of Muir Point), Berg Bay, and Fingers Bay in Glacier Bay or in Dundas Bay (see figure 4).

Under alternative 4, motorized vessels would be required to maintain a 0.25-mile (0.4-kilometer) distance from harbor seals hauled out on ice in Johns Hopkins Inlet on a year-round basis rather than a seasonal basis.

Alternative 5

Vessel Quotas.

Glacier Bay — Alternative 5 would maintain current vessel numbers for Glacier Bay from June 1 to August 31 and would extend the seasonal-use day limits to May and September for cruise ships. The number of cruise ships that would be allowed in May and September represents the same proportion of use allowed at present from June through August (139 cruise ships/92 days June through August = 92 cruise ships/61 days May and September). The number of tour vessels would be limited by the year-round daily quota of three per day. Charter and private vessel classes would maintain the June through August season. Seasonal-use day quotas lower than those allowed under existing requirements are proposed for cruise ships in May and September. This alternative would maximize private vessel use in Glacier Bay by increasing seasonal-use days for private vessels compared with existing conditions. As with alternative 4, seasonal entries would be eliminated with this alternative.

Dundas Bay — Cruise ships would not be allowed in Dundas Bay on a year-round basis. One tour vessel would be allowed per day in the non-wilderness waters of Dundas Bay from June 1 through August 31. Tour vessels would not be allowed within the wilderness waters year-round. Seasonal-use days for charter vessels would be 276, which represents an average of three vessels per day from June through August. No quotas would be set for private vessels in Dundas Bay.

Season.

Glacier Bay — Daily vessel quotas for cruise ships and tour vessels would apply year-round in Glacier Bay. Seasonal-use days would apply from May 1 through September 30 for cruise ships. Daily quotas and seasonal-use days for charter and private vessels would apply for the


Vessel Operating Requirments Under Alternative 4
Figure 4
National Park Service
U.S. Department of the Interior
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements
Environmental Impact Statement
Tarr Inlet
Rendu Inlet 5/1 - 9/5
Upper Muir Inlet 6/1 - 7/15
Wachusett Inlet 7/16 - 8/31
Johns Hopkins Inlet
All Vessels: 5/1 - 6/30
Cruise Ships: 5/1 - 8/31
Speed Limit: 7/1 - 8/31
Russell Islets
Jaw Point
Reid Inlet
Johns Hopkins Inlet 0.25 nautical mile approach limit to harbor seal haul-outs on ice extended year-round
Muir Inlet (East Arm north of Muir Point)
East Arm (North of Sebree Island)
Adams Inlet 5/1 - 9/15
Muir Point
Blue Mouse Cove
Hugh Miller Inlet
Scidmore Bay
Charpentier Inlet
5/1 - 9/15
Glacier Bay
Lone Island
Sebree Island
Sturgess Island
Puffin Island
N. Sandy Cove
Gehrke Rock
Leland Island
S. Marble Island
N
W
E
S
5
0
5
10 Miles
Fingers Bay
Flapjack Island and Islets
Boulder Island
Beardslee Entrance & Islands 5/1 - 9/15
Berg Bay
Dundas Bay
Lower Glacier Bay
Whale Waters: 5/1 - 9/30
Speed Limit: 5/15 - 8/31
Elder Island
Park Boundary
Note: Fingers and Berg Bay would not be closed to cruise ships by regulation, but cruise ships are physically restricted from the bays due to shallow waters. Dates shown are those during which seasonal restrictions apply. The park superintendent may designate temporary whale waters and impose motor vessel speed restrictions in whale waters.
Waters Closed to Cruise Ships
Waters Closed to Cruise Ships and Tour Vessels
Seasonal Non-Motorized Waters**
Islands with Protective Buffers**
(Islands' names shown in red)
Designated Whale Waters (5/1 - 9/30)
Seasonal Speed Restricted Areas**
Seasonal Noise Restricted Areas**
(10 pm - 6 am, 6/1 - 8/31)
** Unchanged from current regulations

existing season of June 1 through August 31, as would the seasonal-use days for tour vessels.

Dundas Bay — The season for vessel quotas in Dundas Bay would be June 1 through August 31.

Permitting Procedures. Under alternative 5, the exemption for private vessels based in Bartlett Cove that enter and exit Glacier Bay (these are not currently counted as daily entries) would be eliminated and a new "short-notice permits" system would be established. Anyone could request a short-notice permit by making a reservation within 48 hours of entrance to Glacier Bay. Up to 10 short-notice permits (of the 25 daily permits allowed) would be set aside for distribution on a short-notice basis. The number of short-notice permits could be adjusted annually by the superintendent through use of the park compendium.

Vessel Operating Requirements. Alternative 5 shares the revisions to operating requirements with alternative 4, with the following exceptions:

1. how vessel speed is defined;
2. the time frame during which speed restrictions are in effect;
3. the time frame during which whale waters are in effect;
4. access for cruise ships and tour vessels in the East Arm; and
5. access for tour vessels in Dundas Bay.

Vessel speed — Vessel speed would be based on "over the ground" rather than "through the water" for all vessel classes. Over the ground speed does not account for water currents, but rather is based on the rate of travel in relation to a fixed point on the ground or the bottom of the water body.

A 13-knot speed limit, as measured over the ground, would be in effect year-round in Glacier Bay for motor vessels greater than or equal to 262 feet (80 meters). In designated whale waters (lower Glacier Bay), a speed limit of 20 knots over the ground would be in effect for motor vessels less than 262 feet (80 meters) from May 15 through September 30. A 10-knot speed limit over the ground would be in effect from May 15 through September 30 for motor vessels when the superintendent has designated a maximum

speed of 10 knots due to the presence of whales. No speed limit would be in effect for vessels less than 262 feet (80 meters) outside designated or temporary whale waters.

Whale waters — Whale waters would be designated in the lower Glacier Bay waters only from May 15 through September 30. In addition, the superintendent may designate any portions(s) of Glacier Bay and Dundas Bay as temporary whale waters and impose motor vessel speed restrictions.

Vessel routes and destinations — Vessel routes are not defined under alternative 5, although cruise ships generally follow the mid-channel of Glacier Bay. The Beardslee Entrance and the entrance to Adams Inlet would be closed to both cruise ships and tour vessels. Dundas Bay would be closed to cruise ships year-round, and the wilderness waters of Dundas Bay would be closed to tour vessels (see figure 5) year-round. Motor vessels would be required to maintain a 0.25-mile (0.4 kilometer) distance from harbor seals hauled out on ice in Johns Hopkins Inlet on a year-round basis.

Alternative 6: NPS Preferred Alternative

Alternative 6, developed in response to public comment on the DEIS and additional NPS consideration, combines elements of alternatives 3 and 5. This alternative does not present any vessel quotas or operating requirements not already analyzed in the DEIS. It is qualitatively within the spectrum of alternatives discussed in the DEIS. Alternative 6 would optimize visitor use opportunities and also simplify and improve vessel operating requirements.

Vessel Quotas.

Glacier Bay — Alternative 6 would maintain the current daily vessel quotas for all four vessel types. The daily quotas for cruise ships and tour vessels would be two per day and three per day, respectively, year-round. The daily quotas for charter and private vessels would be 6 per day and 25 per day, respectively, from June 1 through August 31. The seasonal-use day quotas for charter and private vessels would be 552 and 2,300, respectively, from June 1 through August 31. Seasonal-use days for cruise ships would be 139 from June through August, with the


Vessel Operating Requirments Under Alternatives 5 & 6
Figure 5
National Park Service
U.S. Department of the Interior
Glacier Bay National Park and Preserve
Vessel Quotas and Operating Requirements
Environmental Impact Statement
Upper Muir Inlet 5/1 - 7/15
Tarr Inlet
Reid Inlet 5/1 - 9/5
Wachusett Inlet 7/15 - 8/31
Johns Hopkins Inlet All Vessels: 5/1 - 6/30 Cruise Ships: 5/1 - 8/31 Speed Limit: 7/1 - 8/31
Adams Inlet 5/1 - 9/15
Russell Islets
Jaw Point
Reid Inlet
East Arm
Johns Hopkins Inlet 0.25 nautical mile approach limit to harbor seal haul-outs on ice extended year-round
Blue Mouse Cove
Glacier Bay
Hugh Miller Inlet Scidmore Bay Charpentier Inlet 5/1 - 9/15
Lone Island
Sebree Island
Sturgess Island
Ruffin Island
N. Sandy Cove
Geikie Rock
Leland Island
S. Marble Island
N
W
E
S
5 0 5 10 Miles
Flapjack Island and Islets
Boulder Island
Swanlake Entrance & Islands 5/1 - 9/15
Lower Glacier Bay Whale Waters: 5/15 - 9/30 Speed Limit: 5/15 - 8/31
Elder Island
Dundas Bay
Park Boundary
Note: Dates shown are those during which seasonal restrictions apply. The park superintendent may designate temporary whale waters and impose motor vessel speed restrictions in whale waters. Alternatives 5 and 6 do differ in their vessel operating requirements in the way speed is measured and in the speed limit imposed in temporary whale waters.
Waters Closed to Cruise Ships
Waters Closed to Cruise Ships and Tour Vessels
Seasonal Non-Motorized Waters**
Islands with Protective Buffers** (Islands' names shown in red)
Designated Whale Waters (5/15 - 9/30)
Seasonal Speed Restricted Areas**
Seasonal Noise Restricted Areas** (10 pm - 6 am, 6/1 - 8/31)
** Unchanged from current regulations

potential for increases to 184. In May and September, the seasonal-use day quota for cruise ships would be 92, with the potential for increases to 122. Any increases would be based on scientific and other information and applicable authorities. The determination of whether to increase seasonal-use day quotas for cruise ships would rely on criteria that define the environmental and social conditions that would need to be met before any additional seasonal-use days were approved. These yet to be determined criteria would be based on the results of and guidance provided through studies that examine the effects of vessels on all park resources. Studies would be identified in a research framework developed with the assistance of a science advisory board. This research framework would identify the studies necessary to provide information on the effects of vessel traffic on the environment and develop monitoring information necessary for park management.

Dundas Bay — Cruise ships would not be allowed in Dundas Bay on a year-round basis. One tour vessel would be allowed per day in the non-wilderness waters of Dundas Bay from June 1 through August 31. The seasonal-use day limit for tour vessels would be 92 during this timeframe. Tour vessels would not be allowed within the wilderness waters year-round. Seasonal-use days for charter vessels would be 276, which represents an average of three vessels per day from June through August, but no daily limit for charter vessels would apply. No vessel quotas would apply to private vessels in Dundas Bay.

Season.

Glacier Bay — As is currently the case, daily quotas for cruise ships and tour vessels would be in effect year-round in Glacier Bay. Seasonal-use days would apply from May 1 through September 30 for cruise ships. Daily quotas and seasonal-use days for charter and private vessels would apply for the existing season of June 1 through August 31, as would the seasonal-use days for tour vessels.

Dundas Bay — The season for vessel quotas in Dundas Bay would be June 1 through August 31, although cruise ships would not be permitted year-round and tour vessels would not be permitted in wilderness waters (upper Dundas Bay) on a year-round basis.

Permitting Procedures. Under alternative 6, the exemption for private vessels based in Bartlett Cove that enter and exit Glacier Bay (these are not currently counted as daily entries) would be eliminated and a new "short-notice permits" system would be established. Anyone could request a short-notice permit within 48 hours of entrance to Glacier Bay. Up to 10 short-notice permits (of the 25 daily permits allowed) would be set aside for distribution on a short-notice basis. The number of short-notice permits could be adjusted annually by the superintendent through use of the park compendium.

Vessel Operating Requirements. Alternative 6 shares the revisions to operating requirements with alternative 5, with the following exceptions:

1. how vessel speed is measured; and
2. the speed limit in temporary whale waters.

Vessel speed — For alternative 6 speed would be measured as "through the water" speed for all vessel classes. Vessels greater than or equal to 262 feet (80 meters) would be restricted to 13 knots or less on a year-round basis within Glacier Bay. Vessels less than 262 feet (80 meters) would be restricted to 20 knots or less in the designated lower Bay whale waters from May 15 through September 30. If the presence of whales warrants it, the superintendent may impose temporary whale waters and a vessel speed limit of 13 knots. No speed limit would be imposed in areas outside of designated or temporary whale waters for vessels less than 262 feet (80 meters).

Whale waters — Whale waters would be designated in lower Glacier Bay waters only, from May 15 through September 30. In addition, consistent with current regulations, the superintendent may designate temporary whale waters and impose motor vessel speed restrictions in any portion of Glacier Bay and Dundas Bay having a high probability of whale occupancy, based upon recent sighting and/or past patterns of occurrence.

Vessel routes and destinations — In Glacier Bay, two areas would be added to those already closed to cruise ships and tour vessels through existing regulations. These two additions would be the Beardslee Entrance and the entrance to Adams

Inlet. Dundas Bay also would be closed to cruise ships year-round, and the wilderness waters of Dundas Bay would be closed to tour vessels year-round (see figure 5). Motor vessels would be required to maintain a 0.25-mile (0.4-kilometer) distance from harbor seals hauled out on ice in Johns Hopkins Inlet on a year-round basis.

ENVIRONMENTAL EFFECTS

Many of the environmental effects of vessel traffic would be similar among the six alternatives, in terms of overall impact conclusions (i.e., negligible, minor, moderate, or major). In general, most adverse effects would occur in proportion to vessel numbers, speed, and distribution, including air emissions and disturbance of wildlife and visitors.

Alternatives 2 and 4 have lower vessel numbers than the other alternatives (with the exception that alternative 4 allows more private vessel use days). In most cases, the magnitude of environmental effects also would be lower than would be expected for the other alternatives. Alternative 2 would allow the fewest private vessel use days among the alternatives, while alternative 4 would allow the fewest cruise ships.

Alternatives 3 and 6 have the highest potential level of cruise ship use. Under either alternative, cruise ship numbers would not be increased until specific criteria are set, based on recommendations and guidance provided by impact studies, other information, and applicable authorities. The vessel management for Glacier Bay has worked well over the past several years, providing the opportunity for over 300,000 visitors each year in a manor consistent with park purposes and values. Providing opportunities for people to visit the park is one of the primary purposes of Glacier Bay National Park and Preserve. Alternative 3 maintains the protection measures defined in the 1996 decision while alternative 6 includes revised operating requirements based on experience and knowledge gained over the past several years. The revised measures in alternative 6 would provide clarification for vessel operators, especially private vessel operators, and enhance protection of park resources.

Alternative 4, the environmentally preferred alternative, would eliminate tour vessels from Dundas Bay. This would improve non-tour vessel visitor experience in this area, as well as protect wildlife. The risk of groundings would also be reduced. As with alternative 6, alternatives 4 and 5 would have revised and new operating requirements intended to provide clarification for vessel operators and to reduce environmental effects of vessel traffic. Under these alternatives, cruise ships would be required to travel at speeds no greater than 13 knots throughout Glacier Bay on a year-round basis. This would reduce the potential of cruise ships colliding with humpback or other whales and reduce the potential for fatal whale collisions.

Alternatives 5 and 6 would provide for the highest number of seasonal-use days for private vessels.

Alternative 6, the NPS preferred alternative, would combine the potential increase up to 184 (proposed in alternative 3) with new operating requirements (most of which are shared with alternatives 4 and 5) intended to reduce environmental effects and improve visitor understanding of requirements. Like alternatives 4 and 5, private vessel seasonal quotas would be increased.

An overview of the environmental consequences of the six alternatives for each environmental resource/topic area is provided below and in table 5 beginning on page 46.

PHYSICAL ENVIRONMENT

Soundscape. The "natural soundscape" is what the Park Service calls natural sounds in the absence of human-caused sound. The Park Service considers the natural soundscape as a resource similar to air or water. Director's Order 47, Sound Preservation and Noise Management (NPS 2001c), directs all NPS units to protect, maintain, or restore the natural soundscape resource.

Under any of the alternatives, noise from cruise ships and tour, charter, and private vessels would continue to be common both on the surface and underwater and would frequently intrude over broad areas, such as inlets and bays. More data is needed to determine the actual extent of vessel noise. Vessel noise under all alternatives is considered moderate because noise would regularly intrude upon the natural soundscape over broad areas.

Under Alternative 1, human made sound would be present in the surface soundscape in most areas of the Glacier Bay and Dundas Bay. Human made sound would be dominant near the Bartlett Cove dock and campground at all times and would be expected to be dominant during certain times of the day in other areas at popular stops along the route to upper Glacier Bay and the tidewater glaciers. These areas include:

- Sitakaday Narrows
- Gloomy Knob
- South Marble Island
- North Sandy Cove
- McBride Inlet
- Tarr, Johns Hopkins, and Reid Inlets

Because sound can travel long distances over water, human made sounds could also be heard within the non-motorized waters of Glacier Bay from vessels transiting outside of these areas. Under all alternatives, surface noise from cruise ships, including public address systems, would regularly intrude across broad areas.

However, because human made sounds would be present periodically throughout the day, natural sounds would still dominate in most areas of Glacier Bay and Dundas Bay.

On-going underwater sound monitoring conducted off-shore near Bartlett Cove (NSWC 2002) shows that vessel noise is pervasive underwater in Glacier Bay. Underwater noise from motor vessels is expected to be present throughout all waters open to motorized vessels and also within most non-motorized waters, since sound travels well underwater. The extent of this noise proliferation is expected to be within the moderate range.

While no studies have been conducted in Dundas Bay, vessel noise is expected to be a regular element of the underwater soundscape there as well. Current human-caused surface sounds in Dundas Bay include tour, charter, and private vessels within the wilderness waters of the upper Bay.

Cruise ship related noise could increase in May and September when there is no seasonal-use day quota and 2 cruise ships per day, every day may enter Glacier Bay.

Alternative 2 would have the second lowest vessel noise among the alternatives. This is because reduced cruise ship and charter and private vessel numbers would reduce the overall generation of vessel noise from June through August. This alternative includes the lowest seasonal-use day quota for private vessels. This, in turn could mean a reduction in the amount of human made sound near the shoreline where many private vessels tend to travel.

Alternative 3 would generate the most sound among the alternatives. It would have similar effects to alternative 1, but with the potential to increase cruise ships; this could result in daily exposure of noise from two cruise ships per day.

Alternative 4 would result in the lowest level of vessel-related noise among the alternatives, due to reduced quotas for all vessel classes, speed restrictions on cruise ships (which could greatly reduce the magnitude of underwater sound) and the elimination of cruise ships and tour vessels from a portion of the East Arm, Beardslee Entrance, and Fingers and Berg Bays. Under alternative 4, the soundscape in Dundas Bay would improve because of the daily limit and seasonal quota on charter vessel use and the closing of the Dundas Bay to cruise ships and tour vessels.

Alternatives 5 and 6 would be roughly in the middle range of noise generation among the alternatives. Alternatives 5 and 6 would reduce current effects on soundscape by reducing cruise ship speeds, extending the seasonal-use day quota for cruise ships to include May and September, and prohibiting tour vessels in the wilderness waters of Dundas Bay, the entrance to Adams Inlet, and the Beardslee Entrance.

Air Quality. The two primary concerns related to air quality are the amount of pollutants emitted into the air and the potential from emissions for vessels to leave a visible plumes and/or create haze.

Emissions under all alternatives would be within the moderate range. All alternatives would emit nitrogen oxides in Glacier Bay above the 250 tons per year threshold and, except for alternative 4, emissions of sulfur dioxide above the 100 ton per year threshold. However, based on the large amount of the area over which

emission would occur, the limited number of other significant emission sources, and using Juneau's air quality for comparison, it is unlikely that these emissions would result in ambient air concentrations that are greater than 80% of the National Ambient Air Quality Standards.

Visible haze from stack emissions are known to occur under current conditions, although the frequency, magnitude, and duration of such events is unknown. Reduced vessels under alternative 2 would reduce the magnitude and, because alternative 2 would allow the fewest number of private vessels nearshore, short-term reductions of air quality would be the lowest. Alternative 3 would increase the frequency of visible haze, should cruise ships be increased. The frequency cannot be predicted, although the Park Service is undertaking an air quality monitoring program that would help predict the frequency, magnitude, and duration.

Alternative 4 would produce the lowest amount of emissions into the air due to the lowest numbers of vessels and speed restrictions for cruise ships. Eliminating tour vessels and limiting charter vessels in Dundas Bay would improve air quality there, although there is no evidence that air quality is currently a problem. Alternative 5 would also reduce emissions by limiting cruise ship speeds, by applying seasonal restrictions for cruise ships in May and September, and by eliminating tour vessels from the wilderness waters of Glacier Bay. These same measures would reduce emissions under alternative 6. Alternative 6 would result in increased emissions and visible haze due to the increase in cruise ships. Alternatives 5 and 6 would allow for the highest level of short-term emissions near shorelines due to the increase in private vessels.

Water Quality. While the emissions of small amounts of fuel, oil, and wastewater would vary with the vessel quotas under each alternative, effects on water quality under any of the alternatives are expected to be minor, with the exception of fuel spills in Bartlett Cove, which could cause moderate level effects. A catastrophic oil spill in not an expected outcome of any of the alternatives. Cruise ships carry sufficient fuel into Glacier Bay to cause a major spill, however, such a spill is unlikely because cruise ships

have a good worldwide safety record, are built to very high safety standards, tend to travel mostly in open waters away from navigational hazards, have highly trained and knowledgeable operators, and while in Glacier Bay carry licensed pilots on board the vessel. Tour vessels, on the other hand, have the highest potential for impacts, since they carry relatively large amounts of fuel and tend to travel closer to the shoreline and to more remote areas of Glacier and Dundas Bay than cruise ships. Alternatives 4, 5, and 6 would prohibit cruise ships and tour vessels in Dundas Bay wilderness waters, which could reduce the potential for groundings and possible resulting spills in this area and where groundings have already occurred.

BIOLOGICAL ENVIRONMENT

Threatened and Endangered Species. Populations of both humpback whales and Steller sea lions are recovering from historic lows. A biological opinion, issued by NOAA Fisheries, documents that alternative 6 would not jeopardize the continued existence of the North Pacific humpback whale population or Steller sea lion populations present in Southeast Alaska and would comply with the Endangered Species Act (see appendix K of the FEIS).

Under all alternatives, vessel traffic could regularly disturb humpback whales and Steller sea lions. Animals located near highly traveled vessel areas could be disturbed several times per day during summer. The amount of predicted disturbances varies among alternatives generally in proportion to vessel numbers and in relation to cruise ship speeds. The traffic is not expected to cause animals to leave Glacier or Dundas Bays, but it could cause some animals to leave particular areas to avoid vessel traffic, which in turn, can reduce foraging, survival, and reproduction. The ultimate effect of this disturbance could be reduced energy intake (e.g., feeding) and/or increased energy expenditure (e.g. vessel avoidance behavior). Most wild animals operate under an extremely tight energy budget. Such energy budgets can become critical during high-energy demands, such as breeding, pregnancy, caring for young, or during bouts of extreme weather. Animals subject to repeated distur-

bances might have lower energy reserves and consequentially lower reproduction and/or survival. The effect level is expected to be within the moderate range for all alternatives. Even though disturbance could occur regularly it is not expected to reduce overall abundance of either humpback whales or Steller sea lions.

Humpback whales are vulnerable to being struck by vessels, although an average of only about one mortality is reported each year for the entire North Pacific stock. Still, a humpback whale was struck and killed by a cruise ship in park waters in 1999. Smaller vessels also strike whales, but such strikes are typically not lethal. Based on the best available information, reducing cruise ship speed limits to 13 knots would reduce the risk of fatal vessel/whale collisions. This speed limit would be required throughout Glacier Bay in alternatives 4, 5, and 6.

Underwater noise from vessels is expected to interfere with humpback whale foraging and communication. Cruise ships generate more underwater noise than any other vessel type in Glacier Bay. Based on the analysis, a cruise ship traveling at near 20 knots is probably audible to humpback whales up to 25 miles (40 kilometers) away and would be sufficiently loud to provoke a response from a humpback whale over 6 miles (9 kilometers) away.

Sound levels under alternatives 1, 2, and 3 would commonly be at these levels or higher (with the exception of waters where 10-knot speed limits have been put in place to protect whales). Reduced speed limits (13 knots) for cruise ships under alternatives 4, 5, and 6 would greatly reduce underwater noise and its associated effects.

Steller sea lions may be disturbed by vessel noise as well. However, the primary vessel disturbance factor in Glacier Bay is vessels approaching the sea lions hauled out at South Marble Island. Based on recent research, the 100-yard (90-meter) buffer at this area may not be sufficient and increasing the buffer to up to 200 yards (180 meters) might reduce disturbance to Steller sea lions.

Listed from the highest to lowest levels of disturbance are:

- Alternative 3 has highest cruise ship numbers and does not include speed limits for cruise ships outside of designated and temporary whale waters.
- Alternative 1, the no-action alternative, would not change vessel numbers from those presently in place and does not include speed limits for cruise ships outside of designated and temporary whale waters.
- Alternative 6, the NPS preferred, has the potential to increase cruise ship numbers would restrict cruise ship speeds to 13 knots throughout Glacier Bay and eliminate cruise ships from Dundas Bay.
- Alternative 5 reduces cruise ship numbers in May and September, restricts cruise ship speeds to 13 knots or less throughout Glacier Bay, and eliminates cruise ships from Dundas Bay.
- Alternative 2 contains the lowest vessel numbers but does not include speed limits for cruise ships outside of designated and temporary whale waters.
- Alternative 4, the environmentally preferred alternative, contains the lowest numbers of vessels, includes speed restrictions for cruise ships to 13 knots or less throughout Glacier Bay, and would eliminate cruise ships and tour vessels from Dundas Bay.

Marine Mammals. Vessel traffic under each of the alternatives would regularly disturb marine mammals in Glacier Bay and Dundas Bay. The overall effect is considered moderate because vessels would regularly disturb individual animals, however numbers are expected to remain within historic levels.

The ultimate effect of this disturbance could be reduced energy intake (e.g., feeding) and/or increased energy expenditure (e.g. vessel avoidance behavior). Most wild animals operate under an extremely tight energy budget. Such energy budgets can become critical during high-energy demands, such as breeding, pregnancy, caring for young, molting, or during bouts of extreme weather. Animals subject to repeated disturbances might have lower energy reserves and consequentially lower reproduction and/or survival. Existing regulations for Glacier Bay National Park and Preserve (36 CFR 13.65) specify buffers in haul-outs and approach distance requirements that provide protection from motor vessel activities.

The amount of predicted disturbance varies among alternatives generally

in proportion to vessel numbers. Alternatives 5 and 6 allow the most private vessels among the alternatives, and private vessels are expected to cause some of the greatest disturbances because they tend to travel closer to the shoreline then the other vessel classes where marine mammals are predominant.

The greatest concern for marine mammals is potential additive effect on harbor seals from vessel traffic when combined with the other factors that may be causing harbor seals to decline in Glacier Bay and Southeast Alaska. Glacier Bay supports one of the largest concentrations of harbor seals in Alaska, yet populations have declined dramatically over the last 10 years. The reasons are not known, but declines have occurred throughout the species range and reasons are expected to include factors other than vessel traffic.

Under all alternatives, the upper portions of Johns Hopkins Inlet would be closed to all vessels from May 1 through June 30 to protect harbor seals when they are pupping. Alternatives 1, 2, and 3 would require that vessels remain at least 0.25 mile away from harbor seas hauled out on ice in July and August. This would reduce disturbance to harbor seals when they are molting and especially sensitive to disturbance.

Alternatives 4, 5, and 6 would extend the requirement that vessels remain a minimum of 0.25 mile away from harbor seals hauled out on ice to year round. This would reduce vessel disturbance to harbor seals after August 30, when Johns Hopkins Inlet is open to all vessel types, including cruise ships.

Marine Birds and Raptors. All of the alternatives would result in moderate level effects on marine birds and raptors. The most notable effects would be disturbance of concentration areas of brood-rearing harlequin ducks, molting waterfowl, and foraging marbled and Kittlitz's murrelets. These species are particularly sensitive to vessel traffic and are expected to experience potential local population declines if continually disturbed by vessels. Existing regulations which specify approach limits in certain sensitive areas, would continue to provide protection to seabird colonies.

The level of disturbance is related to vessel numbers. The ultimate effect of this disturbance could be reduced

energy intake (e.g., feeding) and/or increased energy expenditure (e.g. vessel avoidance behavior). Most wild animals operate under an extremely tight energy budget. Such energy budgets can become critical during high-energy demands, such as breeding, pregnancy, caring for young, molting, or during bouts of extreme weather. Animals subject to repeated disturbances might have lower energy reserves and consequentially lower reproduction and/or survival. Private vessels are the most likely to disturb marine birds, since these vessels travel widely throughout Glacier Bay, tend to travel closer to the shoreline than other vessel types, and are the most numerous. Alternatives 5 and 6 would allow the most private vessels and associated effects. This effect is still considered within the moderate range.

Marine Fishes. Effects on marine fish are expected to be minor for all alternatives. Vessel traffic under any of the alternatives would generate underwater noise and vibration that temporarily displace or disturb fish. The degree of displacement or disturbance would depend on the volume of vessel traffic. Implementation of alternatives 2 and 4 would decrease the overall vessel traffic relative to alternative 1 and therefore the disturbance of fish would decrease. Alternative 3 and 6 would increase the number of cruise ship entries could result in an increased displacement or disruption of fish.

The increases in private vessel seasonal-use days under alternatives 4, 5, 6 could result in more sport fishing and therefore increased fish catch and reducing local abundance of species such as halibut.

Coastal/Shoreline Environment and Biological Communities. While some shoreline erosion may occur, the overall effect of vessel traffic on shorelines was found to be minor across all alternatives, with no real difference in the amount of expected effect between alternatives in Glacier Bay and Dundas Bay.

HUMAN ENVIRONMENT

Cultural Resources. None of the alternatives would damage archaeological or historic resources because (a) they are exceedingly rare in Glacier Bay since glaciers have recently scoured the entire Bay and (b) the few that are present are

located well away from shorelines and the effects of vessels.

Effects to ethnographic resources relate to the integrity of traditional cultural properties, including cultural landscapes: namely the Ancestral Homeland of the Huna Tlingit. The effects, which include perceptions of the Huna Tlingit, relate closely to vessel numbers. Therefore, Alternative 3 and 6 would have the greatest effect and alternative 4 the lowest. This effect is considered to be within the moderate range because it is expected that there would be a perceived degradation of cultural landscapes but not to the point of creating a disconnection of peoples from an Ancestral Homeland.

Visitor Experience. One of the important purposes of vessel quotas and operating requirements is to provide a range of enjoyable visitor experiences.

Under all alternatives, the sights and sounds of other visitors and their motorized vessels would detract from the enjoyment of some visitors. Backcountry visitors can be sensitive to this disturbance because they generally travel by non-motorized methods (e.g., kayaks or on foot), which does not mask the sound of vessels, and are more likely to be seeking natural quiet and solitude. However, the sound of other motorized vessels can also impact visitors in motorized vessels when their vessels are drifting without the motor engaged or at anchor.

Alternative 1 would maintain the current level of disturbance, which is considered within the moderate range for backcountry users. Alternative 2 would reduce vessel numbers and associated disturbances to visitors, but would also restrict access by reducing quotas. Alternative 3 would increase opportunities for people to visit Glacier Bay via cruise ship, but would detract from the experiences of other visitors due to the sights, and sounds of and visible haze from cruise ships. Alternative 4 would have the lowest amount of disturbance, but would also greatly reduce available permits for people wishing to visit Glacier Bay and/or Dundas Bay. Alternative 4 would improve enjoyment for visitors aboard charter and private vessels and backcountry users by closing all or a portion of the East Arm of Glacier Bay, the Beardslee

Entrance, Fingers and Berg Bays, and Dundas Bay to cruise ships and tour vessels. This, however, would also reduce opportunities for people wishing to tour Glacier Bay or Dundas Bay in a cruise ship or tour vessel. Alternatives 5 and 6 would close to cruise ships and tour vessels the entrance Adams Inlet, Beardslee Entrance, and the wilderness waters of Dundas Bay. This would improve conditions for charter and private vessel users and backcountry users in these areas and would still keep the East Arm available for cruise ship and tour vessel passengers. Alternatives 5 and 6 would increase nearshore disturbances caused by private vessels but would also reduce vessel-related disturbance in the wilderness waters of Dundas Bay by eliminating tour vessels there.

Under alternatives 1, 2, and 3, "seasonal entries" would still be used to measure quotas for all vessel classes. This could result in some private vessel visitors being denied entry during the peak visitation period of mid-summer. Under alternatives 4, 5, and 6, three changes in the way vessel quotas are measured would improve opportunities for private vessel visitors. The 'based in Bartlett Cove' exemption would be eliminated, short-notice permits for private vessel would be available, and the use of 'seasonal entries' would be eliminated. These actions would simplify the regulations, reduce frustration of visitors in private vessels, and provide increased opportunity for private vessel visitors to experience Glacier Bay during the peak summer months. These alternatives also would simplify whale water designations to make them easier to follow and more reflective of actual conditions.

Alternatives 4 would increase wilderness and solitude in the wilderness waters of Dundas Bay and the East Arm of Glacier Bay north of Muir Point by prohibiting cruise ships and tour vessels. Alternatives 5 and 6 would restrict tour vessels and cruise ships from the wilderness waters of Dundas Bay and the entrance to Adams Inlet and Beardslee Entrance in Glacier Bay. These actions would increase opportunities for solitude and to experience wilderness in these areas for other charter and private vessel visitors and backcountry visitors.

A 13-knot speed limit would be set for cruise ships under alternatives 4, 5, and 6. This would add about 3 hours to the amount of time visitors on cruise ships would remain in Glacier Bay. This additional time could either enhance or detract from the cruise ship passengers visit. Some visitors may enjoy and appreciate the extra time spent in Glacier Bay observing the scenery and wildlife. For other visitors this additional time may appear to be an annoyance and delay them from their future itinerary. The increased time cruise ships spend in Glacier Bay could also increase the exposure other visitors have to the sights and sounds of cruise ships.

Vessel Use and Safety. The effects to vessel safety and use are summarized below according to vessel safety and traffic and the risk of major vessel accidents. Vessel safety and traffic reflects the number of vessels in Glacier and Dundas Bays and the speed at which the vessels travel. Alternative 1 reflects existing conditions and projected increases to fill vessel quotas. Given that there have been no major accidents since this management strategy was implemented and a good safety record from 1994-2001, the effect on vessel safety due to the implementation of alternative 1 would be negligible. The relative change in vessel safety between alternatives 1, 2, and 3 would be reflected in the number of vessels in Glacier Bay at any one time. The decrease in vessels in alternative 2 could increase the relative level of vessel safety and the increase in vessels in alternative 3 could decrease the relative level of safety compared to alternative 1.

Alternatives 4, 5, and 6 have vessel quotas for Dundas Bay as well as Glacier Bay and revised operating requirements. The decrease in the number of vessels, the designated vessel routes, and the speed limits included in alternative 4 could increase vessel safety by decreasing and controlling vessel traffic Glacier Bay. Restricting cruise ships and tour vessels from Dundas Bay in alternative 4 could reduce vessel congestion in that area and prevent groundings. Dundas Bay is poorly charted and contains many navigational hazards and shallow areas that could pose safety hazards to cruise ships and tour vessels.

The vessel quotas in alternatives 5 and 6 are comparable to current high

use days; therefore, their effects are similar to alternative 1. However, alternative 5 measures vessel speed over the ground whereas alternative 6 would measure vessel speed through the water. The measurement of vessel speed over the ground could decrease vessel safety under alternative 5 because vessel maneuverability can be, at times, compromised when vessels try to maintain their speed over the ground and travel with currents. Under alternative 5 and 6 the restriction of cruise ships and tour vessels from Dundas Bay wilderness waters could increase vessel safety compared to alternative 1.

The risk of a major vessel accident is similar among all the alternatives. The history of vessel incidents shows that there have been no major accidents, however, the potential still exists. The worst case accident scenario for Glacier Bay would be a major fuel spill in ice-filled waters. Therefore, the risk of an accident increases with an increase in the number of vessels that can enter ice-filled water. Under alternative 1, the risk of such an accident is low and classified as minor. Because of the decreased number of total vessels under alternatives 2 and 4, the risk of an accident in ice filled waters would be reduced to extremely low. The increases in the number of vessels per season in alternatives 3, 5, and 6 incrementally increases the probability of accident to minor effect.

However, under alternatives 1, 2, and 3 all vessels would be able to travel at unlimited speeds throughout Glacier Bay and Dundas Bay with the exception of designated and temporary whale waters and those areas closed to motorized vessels. Under alternative 4, 5, and 6 all tour, charter, and private vessels would be able to travel at unlimited speeds in the same areas. The ability to travel at unlimited speeds could increase the potential for a vessel accident in the areas mentioned above. By reducing cruise ships to 13 knots or less under alternatives 4, 5, and 6 the potential for a vessel accident or grounding could be reduced.

One vessel accident involving a tour vessel has already occurred within the wilderness waters of Dundas Bay. Eliminating cruise ships and tour vessels from the wilderness waters of Dundas Bay under alternatives 4, 5, and 6 would reduce the risk of a vessel accident in this area to extremely low.

Wilderness Resources. Under all alternatives, vessel traffic would reduce wilderness values along the terrestrial shoreline of Glacier Bay and Dundas Bay. Alternative 4 would have the lowest effect on wilderness values because of the lower vessel numbers and the elimination of cruise ships and tour vessels in all of Dundas Bay, East Arm of Glacier Bay, Beardslee Entrance, and Fingers and Berg Bays. Alternative 5 and 6 would eliminate cruise ships and tour vessels from the entrance to Adams inlet, Beardslee Entrance, and the wilderness waters of Dundas Bay, improving wilderness conditions there. Alternatives 3 and 6 would increase the potential for visible haze, noise, and naturalness in wilderness due to the increase in cruise ships.

Local and Regional Socioeconomics. In general, effects from changes in cruise ship and tour vessel quotas could occur at the tourism-industry level, while changes in charter and private vessels could occur at the local level, including the many small communities in the Icy Strait area.

CONCLUSIONS REGARDING IMPAIRMENT

A determination of impairment is dependent on an evaluation of the context, severity, duration, and timing of environmental effects. The effects of a proposed action would be considered impairment if 1) a native species would be lost or could no longer sustain a viable population in the park; 2) ecological processes would be diminished such that they were permanently disrupted in a large portion of the park; 3) resources would be diminished to the point that the public could no longer have the opportunity to enjoy them; and 4) if the park could not attain the goals set out in its management plans (NPS NRPC 2002).

The potential for impairment was evaluated for all the physical and biological resources, and some of the resources in the human environment (cultural and wilderness resources). The other elements of human environment, visitor experience, vessel use and safety, local and regional socioeconomics) are not park resources and therefore not subject to impairment evaluation. None of the effects resulting from the implementation of any of the

TABLE 5: SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Physical Environment					
Soundscape					
Vessel noise would intrude on the natural soundscape on the surface and underwater. Shoreline areas would be subjected to vessel noise, potentially interfering with visitor enjoyment of the natural soundscape.	Fewer cruise ships, charter, and private vessels would reduce human-caused sounds, particularly along shorelines, where private vessels are more likely to travel.	Assuming 184 cruise ships during the summer, the underwater soundscape would be subjected to four cruise ship passings each day, every day during summer. Other vessel levels and operating requirements and associated human-caused noise would be the same as alternative 1.	The East Arm of Glacier Bay and Dundas Bay would be improved by limiting charter vessels and eliminating tour vessels. Reducing cruise ship speeds to 13 knots would greatly reduce underwater noise levels.	Increases in private vessels would increase vessel noise along shorelines and in the more remote places of Glacier Bay. Reducing cruise ship speeds to 13 knots would greatly reduce underwater noise levels.	Increases in private vessels would increase vessel noise along shorelines and in the more remote places of Glacier Bay. Underwater soundscape would be subjected to four cruise ship passings each day during summer. The reduction of cruise ship speeds to 13 knots would reduce underwater noise levels.
Air Quality					
Under certain weather conditions (calm with a temperature inversion), stack emissions would be visible and could linger for several hours.	Fewer cruise ships would reduce the frequency of haze or stack emissions.	Studies would need to demonstrate that air quality would not be significantly degraded before increasing cruise ships. A 32% increase in cruise ships would greatly increase the frequency of visible stack emissions.	Speed restrictions on cruise ships and lower vessel numbers would reduce emissions and visible plume events. Closure of the east arm to tour vessels could improve visibility there.	As with alternative 4, speed restrictions would reduce air emissions, but visible plumes would still occur under certain weather conditions. Increased private vessels would increase air emissions near shorelines.	Emissions would be less than baseline conditions due to the reduction of vessel speeds. Increases in cruise ships would increase the frequency of visible stack emissions. Studies would need to demonstrate that visibility would not be significantly degraded before increasing cruise ships. Increased private vessels would increase air emissions near shorelines.
Water Quality					
Effects would be minor since water quality impacts from spills would be short-term, localized, and the spill response capability is high. A major spill in ice-filled waters is unlikely, but would be a major effect since spill response would not be possible.	Effects not discernible from alternative 1. Effects related to discharge of bilge water and vessel grounding or collision would be incrementally lower due to the reduced number of cruise ships.	Should cruise ship numbers be increased, then an associated increase in inadvertent discharges into the water would occur. The risk of a major accident would increase, but still remain very low.	Similar to alternative 1; could result in a lower level of risk of inadvertent discharge of bilge water. Dundas Bay would benefit with restriction of tour vessels.	Effects would be similar to alternative 1. Restriction on tour vessels in Dundas Bay would reduce spill potential in those areas.	If cruise ship numbers increased, then there could be an associated increase in inadvertent discharges. The risk of a major accident would increase, but still remain very low and would lower than alternative 3 given that vessel speeds would be reduced.
Biological Environment					
Threatened and Endangered Species					
Vessel traffic would continue to adversely affect both humpback whale and Steller sea lions. Effects would be at the level of individual and not the population. Humpback whales would continue to be disturbed by the sight and sounds of vessels. Collisions with cruise ships would be rare but, over time, would be unavoidable. Existing regulations to protect whales and sea lions would remain in place.	Fewer cruise ships would lower exposure to noise and risk of collisions.	Increasing cruise ship numbers would increase associated noise exposure and risk of collisions.	The combination of reducing cruise summer ship numbers and speed would greatly reduce noise exposure and the risk of collision. Humpback whales would still be exposed to vessel noise from private vessels, which would slightly increase. Restrictions in Dundas Bay would benefit whale use there.	Speed reductions for cruise ships would greatly reduce noise and the risk of collision. Increasing private vessels would increase non-lethal injuries to humpback whales. Such events are expected to be rare but unavoidable.	Increasing cruise ship numbers in conjunction with the reduction of cruise ship speed would slightly increase associated noise exposure and risk of collisions. Increasing private vessels would increase non-lethal injuries to humpback whales.

TABLE 5: SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Marine Mammals					
Vessel traffic may contribute to reported declines in harbor seal populations. Effects on Minke whales would be similar to those described for humpback whale. Other marine mammals would avoid vessel traffic but would otherwise not be harmed.	Similar to alternative 1, but slightly decreased chances of distribution shifts or animal collisions due to lower vessel numbers.	Similar to alternative 1, but potentially increased disturbance if cruise ship numbers are increased. Populations are expected to remain stable.	Much less frequent disturbance due to speed limits, vessel reductions, and restrictions at Dundas Bay and the East Arm. Additional protection for harbor seals in Johns Hopkins Inlet would reduce effects. Expanding seasonal restrictions would increase protection during early and late summer.	Increasing private boats would increase disturbance to marine mammals. Expanding seasonal restrictions would increase protection during early and late summer.	Abundance would be expected to remain stable, but disturbance would increase due to the increased number of cruise ships. This disturbance would be dampened by the decrease in cruise ship vessel speed. However, increase the number of private boats will increase disturbance. Expanding seasonal restrictions would increase protection during early and late summer.
Marine Birds and Raptors					
Vessel traffic in Sitakaday Narrows, Reid Inlet, the East Arm, and Dundas Bay would continue to disturb murrelets, molting waterfowl, and breeding harlequin ducks.	Overall effects would be similar to alternative 1. The amount of disturbances would decline slightly.	Overall effect would be similar to alternative 1. The amount of disturbances would increase if cruise ship numbers are increased.	Reduced vessel traffic would provide a corresponding reduction in vessel disturbance on marine birds.	Increases in private vessels, which can venture into remote bays and inlets, would increase disturbance to molting waterfowl, harlequin ducks.	The amount of disturbances would increase if cruise ship numbers are increased, but would not be as great as alternative 3 since cruise ship speeds would be reduced. Increases in private vessels would increase disturbance to molting waterfowl, harlequin ducks.
Marine Fishes					
Vessel traffic could displace some fish, but overall, the current level of vessel traffic has not been found to seriously disrupt fish populations.	Effects not discernible from alternative 1.	Effects not discernible from alternative 1.	Effects not discernible from alternative 1.	Effects not discernible from alternative 1.	Effects not discernible from alternative 1.
Coastal/Shoreline Environment and Biological Communities					
Effects to shoreline would be minor because current vessel traffic does not cause significant erosion of shorelines. Effects to the biological shoreline communities would be minor. Individual beaches may experience some erosion and sediment suspension from vessel traffic.	Effects not discernible from alternative 1.	Effects not discernible from alternative 1.	Similar to alternative 1. Sediment erosion, re-suspension, or relocation would be slightly greater than current conditions due to a slight increase in private vessels.	Similar to alternative 1. Increase private vessels use would increase sediment erosion, re-suspension, and relocation.	Similar to alternative 1. Higher numbers of private vessels and cruise ships would have the potential to alter the shoreline to a greater extent due to vessel wakes.
Human Environment					
Cultural Resources					
Effects to archaeological and historic resources would be negligible because resources would remain eligible for the National Register of Historic Places. Effects to ethnographic resources would be moderate since the project would potentially affect the integrity of traditional cultural properties.	Effects not discernible from alternative 1.	Increasing cruise ship numbers to 2 per day, every day, during the summer would eliminate opportunities to undertake traditional activities in the central portions of Glacier Bay without the presence of a cruise ship.	Most effects not discernible from alternative 1. Effects to cultural landscapes would be minor due to longer restricted-entry season, slower vessel speeds, and additional restricted waters.	Most effects not discernible from alternative 1. Effects to cultural landscapes would be moderate because alternative 5 would allow more private vessels.	Most effects not discernible from alternative 1. Effects to cultural landscapes would be moderate because alternative 6 would allow more private vessels.

TABLE 5: SUMMARY OF DIRECT AND INDIRECT EFFECTS BY RESOURCE FOR EACH ALTERNATIVE

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Visitor Experience					
Effects would be moderate for backcountry visitors because the presence of motorized vessels could lead to potential loss of opportunity to experience solitude.	A 30% reduction in cruise ships would decrease the opportunity for passengers to experience Glacier Bay proper.	Increase cruise ship numbers would disturb backcountry visitors as well as others because of the loss of opportunities for solitude.	Fewer vessels greatly increase solitude for park visitors.	Increases in private vessels would detract from wilderness experience for backcountry visitors.	Effects would be minor for charter and private vessel passengers and major for backcountry visitors because of the loss of opportunities for solitude.
Vessel Use and Safety					
Effects would be negligible because controls on vessel entry strictly limit the density of vessels in Glacier Bay, but limited congestion would continue to occur at Bartlett Cove and Tarr Inlet.	Effects not discernible from alternative 1.	Risks of vessel accidents would increase, but would remain minor, since overall vessel density would remain low.	Effects would be positive because reduced vessel entries and speed limits would increase vessel safety and decrease vessel traffic. Eliminating tour vessels from Dundas Bay would eliminate the current risks associated with operating large vessels in relatively shallow areas. Formally defining cruise ship routes would significantly reduce the risk of groundings and potential fuel spills. Reducing cruise ship speed would further reduce the currently low risk of accidents.	Reducing cruise ship speeds would further reduce the currently low risk of accidents.	Risks of vessel accidents would increase, but would remain minor, with the increase in both cruise ships and private vessels. However, the risk would be lessened by the reduction of cruise ship speeds, further reducing the currently low risk of accidents.
Wilderness Resources					
Effects would be minor for most areas and moderate for concentrated use areas, such as Johns Hopkins and Tarr Inlets, where vessel noise and air pollution would be heightened. Most effects would occur along shorelines.	Effects not discernible from alternative 1.	Increasing cruise ships to 184 during summer would reduce the naturalness of wilderness near the tidewater glaciers, where cruise ships spend most of their time while at Glacier Bay.	Reduced vessel numbers would reduce vessel exposures to wilderness. Reducing cruise ship speed limits would reduce vessel emissions and noise, but would also increase the time cruise ships are within Glacier Bay.	Effects would be similar to alternative 1, but with increased protection to Dundas Bay. As with alternative 4, reducing speed limits would reduce vessel emissions and noise, but would also increase the time cruise ships are within Glacier Bay.	Effects would be similar to alternative 1, but with increased protection to Dundas Bay. As with alternative 4, reducing cruise ship speed limits would reduce vessel emissions and noise, but would also increase the time cruise ships are within Glacier Bay. The increase of cruise ships to 184 during the summer would reduce the naturalness of wilderness near the tidewater glaciers when the cruise ships spend most of their time in Glacier Bay
Local and Regional Socioeconomics					
Effects to the economies of neighboring communities and Southeast Alaska would be negligible, as would the effects to Glacier Bay-dependant businesses.	Effects would be minor to moderate due to decrease in income and employment for communities with economic linkages to Glacier Bay. Reduced local spending associated with private vessels.	Effects on local communities would be negligible.	Effects would minor to moderate due to income and employment decrease related to vessel decreases and reduced local spending associated with private vessels.	Effects would be similar to alternative 1; changes to Dundas Bay management could have a minor positive effect on commercial users.	Effects would be positive due to increase in cruise ships; effects on local communities would be negligible. Changes to Dundas Bay management could have a minor positive effect on commercial users.

proposed alternative constituted major effects and none had the context, severity, duration, and timing of effects which would result in impairment. Negligible, minor, or moderate effects are not likely to lead to impairment.

ONGOING AND POTENTIAL FUTURE STUDIES AND MONITORING

Since the 1996 finding of no significant impact (FONSI) for the vessel management plan and environmental assessment (VMP/EA), the Park Service has instituted a research program. The vessel management plan identified numerous information and management needs associated with determining appropriate levels of vessel traffic and designing mitigation measures to protect resources in Glacier Bay National Park and Preserve. Several of the studies identified in the VMP/EA have been accomplished and information from those studies is included in this environmental impact statement. Those studies include, but are not limited to, the following:

- Reaction of Steller sea lions to vessels - Completed in 2000
- Disturbance of harbor seals by motorized vessels in Johns Hopkins Inlet - Completed in 2001
- Monitoring underwater noise in Glacier Bay National Park - Ongoing
- Disturbance of harbor seals at a terrestrial haul-out in Glacier Bay National Park - Ongoing
- Population characteristics of humpback whales in Glacier Bay and adjacent waters - Ongoing
- Opportunistic sightings of marine mammals in Glacier Bay National Park - Ongoing
- Humpback whale song recording in Glacier Bay: their frequency and occurrence - Ongoing
- Humpback whale forage study - Completed in 2002
- Coastal resources inventory and mapping project - Ongoing
- Development of coastal monitoring protocols and process based studies - Completed in 2001
- Ecology of selected marine communities in Glacier Bay - Completed in 2003
- Distribution and abundance of small schooling fish in near shore communities - Completed in 2003
- Marine Predator studies in Glacier Bay National Park - Ongoing
- Sea otter distribution, relative abundance, prey analysis, and impact on benthic communities - Ongoing

- Fjord oceanographic processes in Glacier Bay, Alaska - Ongoing
- Mapping the benthic habitat in Glacier Bay, Alaska - Completed in 2001
- Abundance and distribution of forage fish and Plankton - Completed in 1999

Many other resource studies are either ongoing or planned, as well as the ongoing scientific research that is a major purpose of Glacier Bay National Park and Preserve. Based on analysis in the EIS, future useful studies would include:

- Air quality studies to evaluate stack emissions that may be causing visible plumes or haze.
- Additional study regarding vessel noise levels, both surface and subsurface, including studies to evaluate cruise ships traveling at relatively high speeds.
- Humpback whale monitoring to identify population trends and to locate concentration areas that warrant designation as temporary whale waters.
- Harbor seal populations should be closely monitored to document recovery or further declines.
- Visitor surveys should be conducted to monitor visitor use and experience.

NOAA Fisheries' Recommendations

NOAA Fisheries made four conservation recommendations in the 2003 biological opinion:

1. NPS should continue to monitor the levels of disturbance from vessels and vessel noise in Glacier Bay National Park Waters to determine the extent of take of Steller sea lions and humpback whales that would occur under the decision. Upon determination of appropriate take levels, and issuance of regulations or authorizations under Section 101(a)(5) of the Marine Mammal Protection Act and/or its 1994 Amendments, NOAA Fisheries would amend the opinion to include an ESA incidental take statement for listed species in the action area. No increases in cruise ship entries into Glacier Bay from the 2003 levels should occur until these determinations have been made.

2. NOAA Fisheries expressed concern about the potential for collisions to occur that result in serious injury or mortality to the whale, especially because as numbers of whales and vessels increase the probability of

collision would likely increase. The Park Service continues to monitor the occurrence of whales in nearshore waters to determine if maximizing private vessel use in Glacier Bay by increasing the number of seasonal-use days for private vessels results in increased disturbances to marine mammals including sea lions on rocks, or foraging whales.

3. Given that vessel length and speed are an important factor in the severity of whale vessel collisions, and that NOAA Fisheries included waters immediately adjacent to the park entrance in Icy Strait and at Point Adolphus as part of the action area, and that the large whale concentration at Point Adolphus, a popular whale watching location for vessels entering and exiting NPS waters, is not protected by vessel speed limits NOAA Fisheries made the following recommendation. The NPS should work with NOAA Fisheries, the U.S. Coast Guard and the State of Alaska to implement vessel speed limits, or exclusion zones in nearshore waters of Icy Strait (i.e., within 1 mile [1.6 kilometers] of Point Adolphus) adjacent to park waters that contain known concentrations of whales, or establish agreements with cruise ship and tour vessel concessioners whereby vessel speed and course restrictions are adopted beyond the NPS boundaries in these areas where whales are known to forage and occur in large numbers.

4. And finally NOAA Fisheries concluded that the proposed increases in vessel traffic are occurring in an area where disturbance and collision risk are already a concern, and in absence of a quantitative determination of ESA and MMPA take levels. It is NOAA Fisheries recommendation, therefore, that the Park Service should monitor and evaluate its vessel operating requirements to determine if they are effective at protecting whales in these nearshore waters. Two essential elements of this recommendation are measurements of compliance and effectiveness of regulations.

MITIGATION MEASURES

One potential mitigation measure was identified as part of the effects analysis. The measure responds to

predicted disturbance to Steller sea lions, a threatened species. Current regulations require a 100-yard (90-meter) setback from the Steller sea lion haul-out at South Marble Island. However, recent research has shown that disturbance is still occurring under the regulation, including individual sea lions entering the water due to an approaching vessel (Mathews 1997 and 2000). The studies showed that the activity rate of sea lions at the haul-out increased as vessels approached within 200 yards (180 meters). The study also found that vessels regularly approached closer than the 100-yard (90-meter) buffer. Increasing the buffer, therefore, would likely reduce disturbances to the Steller sea lion haul-out at South Marble Island. This increase would, however, detract from visitor's ability to see the haul-out. Viewing this haul-out often ranks high among visitors' experiences within Glacier Bay.

FUTURE STEPS

Record of Decision

When an EIS is prepared, the ultimate choice of an alternative, mitigation measures, and the decision rationale are documented in the record of decision. Publication of the record of decision will follow a 30-day no-action period after release of the FEIS. The record of decision is scheduled for late November 2003.

Regulations

Should any of the action alternatives be selected, regulations would need to be promulgated. This would be a public process. Final regulations could be in place by early 2005.

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so that all may experience our heritage.

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October 2003

UNITED STATES DEPARTMENT OF THE INTERIOR · NATIONAL PARK SERVICE